

# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

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January 12, 2007

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TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *PL*

FROM: James D. Smith, Environmental Scientist I *DS 01/18/07*

RE: 1st North Federal Lease Boundary Addition, CONSOL Energy Company, Emery Deep Mine, C/015/0015, Task ID #2646

### SUMMARY:

On September 12, 2006, the Division received the Permittee's proposed IBC amendment for the addition of 160 acres to the current Emery Deep Mine permit area. Because the BLM subsequently required the Permittee to revise their plan to include full-extraction mining, the Permittee revised the proposed IBC amendment to include full-extraction mining; this revision included an up-dated PHC determination of the impacts from the proposed full-extraction mining. The Division received the revision on December 15, 2006.

The IBC area encompasses approximately 160 acres of federal coal located in the SW/4NW/4, NW/4SW/4, NE/4SW1/4, and SE/4SE/4 of Sec. 22, T. 22 S., R. 6 E., SLBM. The surface owner is D. U. Company.

The IBC is adjacent to the current Emery Mine permit area, actually filling a gap in the permit area. Plate V-5 and other maps in the current MRP already show mining projected into this IBC area. Plate V-5 and other maps need to be updated to show the IBC as part of the permitted area.

The IBC is in the same drainage as the current permit area. There will be no need for additional surface disturbance. Coal will be removed from the IJ Zone of the Ferron Sandstone, using room-and-pillar methods.

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**TECHNICAL ANALYSIS:**

**ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

**GEOLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

**Analysis:**

Geologic resources of the current permit area, IBC, and adjacent areas are described in Chapter V of the current MRP. Geologic Resource Information for the IBC submittal is discussed in Section XIII.C.5, and the hydrogeologic setting is described in Section VI.A.7.

The coal to be mined is the IJ zone in the upper Ferron Sandstone. Approximately 300 to 500 ft of overburden overlies the coal in the IBC area. The Permittee considers analyses of roof and floor materials that are in the current MRP are representative of conditions expected in the IBC, and acid- and toxic-forming potential is low (IBC Section XIII.C.5).

**Findings**

Geologic Resource Information is sufficient to meet the requirements of the Coal Mining Rules.

**HYDROLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

**Analysis:**

**Sampling and Analysis**

There are no changes or additions to the sampling and analysis for resource information.

### **Baseline Information**

Baseline hydrologic information is discussed in Section XIII.C.6.1. Ground-water information is in Section XIII.C.6.2 and surface water information in XIII.C.6.3. No additional baseline data are to be collected for this IBC. Existing baseline hydrologic data have been collected from at sites adjacent to the IBC, and these data are discussed in Chapter VI of the current MRP. There is one piezometer, EMRIA3, within the IBC (Figure XIII-2).

### **Baseline Cumulative Impact Area Information**

The IBC does not involve mining in surface or ground-water basins other than those authorized under the current permit. It is within the current CIA of the Emery Mine. No additional information has been submitted for an update of the CHIA. The Division has reviewed this proposed permit revision and determined that the CHIA does not need to be renewed or updated.

### **Modeling**

No modeling was done.

### **Probable Hydrologic Consequences Determination**

This is discussed in Section XIII.C.6.7 Probable Hydrologic Consequences Determination of the IBC amendment. This section discusses the PHC of mining in the IBC, and refers to Section VI.A.7 for the PHC for the current MRP. The Probable Hydrologic Consequences of the IBC are the same as for the existing mine:

- Changes to the potentiometric surfaces in the Ferron Sandstone due to mine dewatering and
- Changes to the quality and quantity of surface waters due to mine dewatering discharges.

Anticipated impacts to ground-water quality are discussed in Section VI.A.7 of the current MRP. The Permittee anticipates no degradation of ground-water quality in the IBC.

Information on acid- and toxic-forming potential of the coal, overburden, and underburden is in discussed in Section XIII.C.5 of the IBC application.

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**Groundwater Monitoring Plan**

Ground-water monitoring plans are discussed in Section VI.A.5 of the current MRP. This IBC amendment does not propose changes to the water monitoring plans.

**Surface-Water Monitoring Plan**

Surface-water monitoring plans are discussed in Section VI.A.5 of the current MRP. This IBC amendment does not propose changes to the water monitoring plans.

**Findings:**

Hydrologic Resource Information is sufficient to meet the requirements of the Coal Mining Rules.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

All maps showing the permit boundary need to be updated to include the IBC within the permit area boundary.

**Findings:**

Maps, Plans, and Cross Sections of Resource Information are not sufficient to meet the requirements of the Coal Mining Rules. Before approval, the Permittee must provide the following, in accordance with:

**R645-300-121.120, -141, -154; R645-301-142, -521, -525.100,** All maps showing the permit area boundary need to be updated to include the IBC in the permit area boundary.

**OPERATION PLAN**

**COAL RECOVERY**

Regulatory Reference: 30 CFR 817.59; R645-301-522.

### **Analysis:**

The Permittee commits to coal recovery in a manner that maximizes utilization and recovery of the resource while maintaining environmental integrity. Room-and-pillar mining with no second mining was originally planned for the IBC area, but the BLM is now requiring full extraction mining. The Permittee has modified the proposed IBC amendment and it now includes plans for pillar extraction (XIII.A Introduction, XIII.D.1 Mining Operations and Facilities, and XIII.D.3 Coal Recovery).

### **Findings:**

Coal Recovery Information is sufficient to meet the requirements of the Coal Mining Rules.

## **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

### **Analysis:**

#### **General**

Information on surface and ground water resources and the PHC of mining in the IBC and adjacent areas is in Section XIII.C.6 of the IBC submittal. Information on the acid-and-toxic-forming potential of the coal, overburden, and underburden is in Section XIII.C.5 of the IBC submittal. No surface disturbances are planned in the IBC area, hence, no diversions, stream buffer zones, diversions, sediment control structures, or other treatment facilities are to be installed for mining in the IBC (XIII.D.5 Hydrologic Information).

#### **Groundwater Monitoring**

Ground-water monitoring plans are discussed in Section VI.A.5 of the current MRP. This IBC amendment does not propose changes to the water monitoring plans.

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### **Surface Water Monitoring**

Surface-water monitoring plans are discussed in Section VI.A.5 of the current MRP. This IBC amendment does not propose changes to the water monitoring plans.

### **Acid- and Toxic-Forming Materials and Underground Development Waste**

Information on acid- and toxic-forming potential of the coal, overburden, and underburden is in discussed in Section III.C.5 of the IBC application.

### **Diversions: General**

No surface disturbances are planned in the IBC area, hence, no diversions, stream buffer zones, diversions, sediment control structures, or other treatment facilities are to be installed for mining in the IBC (XIII.D.5 Hydrologic Information).

### **Findings:**

Hydrologic Operations Information is sufficient to meet the requirements of the Coal Mining Rules.

## **MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

### **Analysis:**

All maps showing the permit boundary need to be updated to include the IBC within the permit area boundary.

### **Findings:**

Maps, Plans, and Cross Sections of Mining Operations do not meet the requirements of the Coal Mining Rules. Before approval, the Permittee must provide the following, in accordance with:

**(Repeat) R645-300-121.120, -141, -154; R645-301-142, -521, -525.100,** All maps showing the permit area boundary need to be updated to include the IBC in the permit area boundary.

## RECLAMATION PLAN

### GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830. . 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

#### Analysis:

There will be no additional surface disturbance, so no additional reclamation will be required. Chapter III of the current MRP contains the Reclamation Plan for the Emery Mine.

#### Findings:

General Information on the Reclamation Plan is sufficient to meet the requirements of the Coal Mining Rules.

### HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

#### Analysis:

##### Hydrologic Reclamation Plan

The Reclamation Plan in Chapter III of the current MRP includes information on surface- and ground-water monitoring, structure removal, backfilling and grading, drainage control, topsoil distribution, and revegetation.

#### Findings:

Hydrologic Information on the Reclamation Plan is sufficient to meet the requirements of the Coal Mining Rules.

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**MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION  
OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

**Analysis:**

All maps showing the permit area boundary need to be updated to include the IBC in the permit area boundary.

**Findings:**

Maps, Plans, and Cross Sections of Mining Operations do not meet the requirements of the Coal Mining Rules. Before approval, the Permittee must provide the following, in accordance with:

**(Repeat) R645-300-121.120, -141, -154; R645-301-142, -521, -525.100, All maps showing the permit area boundary need to be updated to include the IBC in the permit area boundary.**

**RECOMMENDATIONS:**

The IBC amendment should not be approved for incorporation into the MRP until the deficiencies identified in this Tech Memo have been addressed to meet the requirements of the Coal Mining Rules.